REMARKS

Claims 1-31 are pending, with claims 1, 10, 16, 23, and 29 being independent. Claims 9, 15, 18, and 24 have been cancelled by this amendment without prejudice. Claims 1, 10, 16, 19, 23, 25, and 29 have been amended. No new matter has been added. Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 1, 10 and 29-31 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Johnson (Patent No. US 6,415,253). Claims 2-9 and 11-28 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Johnson. These contentions are respectfully traversed.

Independent claim 1 has been amended to include the language of cancelled claim 9: "wherein determining the speech-presence-uncertainty metric comprises determining the speech-presence-uncertainty metric based on a full band minimum mean square error estimator weighting of the audio input" (emphasis added). For example, as described in the application:

> FIG. 7 illustrates a speech/pause uncertainty assessment. A time to frequency transform, $Z_n = T(z_n)$, is performed at 700. A speech presence likelihood may be calculated at 710:

$$SpeechP = \frac{\sum_k \hat{P}_n^y(k)}{\sum_k \hat{P}_n^y(k) + \sum_k \hat{P}_n^v(k)}$$

where P^y denotes the power spectrum of the clean speech, P^v denotes the power spectrum of the noise, and the "^" symbol above a quantity indicates that the quantity can be an estimate and need not be the true quantity. For example, $\hat{P}^y$ can be an estimate of the clean speech power spectrum.

The equation above for calculating speech presence likelihood is also an estimator weighting in the sense that if one solves for the MMSE estimator weighting of the full-band speech energy (under some assumptions), the solution is $SpeechP * Sum(|Z(k)| * |Z(k)|)$. The input parameters, z_n and H_n, may be vectors of length n, where z_n is the current (n^{th}) frame of original noisy speech data, and H_n is the filter coefficients of the current frame generated by a noise suppressor system.

See Specification at page 9, line 20, to page 10, line 17.

While the SpeechP equation looks similar to a Wiener filter, it should be noted that the summation is over index k, not n. That is to say, the summation is over frequency for the full frequency band. Thus, this equation reflects the average energy over the entire frequency spectrum for input data, and the resulting estimator represents the full band energy of the input data.

The Office rejects original claim 9 on the basis that, "the speech-presence-uncertainty metric is determined in part by Wiener filter coefficients. Wiener filtering is well-known in

the art to be a minimum mean square error estimator)." *See* Office Action mailed 03/27/2007 at page 9. However, this fails to address the claimed subject matter, which recites, "a full band minimum mean square error estimator weighting of the audio input." (Emphasis added.)

When addressing how his voice activity detector (VAD) operates, Johnson makes clear that, "the VAD 20 utilizes the 321 magnitude components from the FFT module 18 in order to compute estimated noise energy ESn (n=1, . . . , 6) in six different frequency subbands. The frequency subbands are determined by analyzing the spectrums of, for example, the 42 phonetic sounds that make up the English language." *See* Johnson (Pat, No. US 6,415,253) at col. 9, lines 6-12 (emphasis added). Thus, Johnson does not include, and explicitly teaches away from, using a full band estimator to determine speech-presence-uncertainty, as presently claimed.

Therefore, independent claim 1 should now be in condition for allowance. Similar amendments have been made to independent claims 10, 16, 23, and 29. Thus, each of these claims should be in condition for allowance for at least similar reasons. In addition, dependent claims 2-8, 11-14, 17, 19-22, 25-28, 30, and 31 should be in condition for allowance based on the above arguments and the additional recitations they contain.

Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific issue or comment does not signify agreement with or concession of that issue or comment. Because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

It is respectfully suggested for all of these reasons, that the current rejections are overcome, that none of the cited art teaches or suggests the features which are claimed, and therefore that all of these claims should be in condition for allowance. A formal notice of allowance is thus respectfully requested.

Please apply any necessary credits or charges to deposit account 06-1050.

Respectfully submitted,

Date: June 27, 2007

for Scott C. Harris
Reg. No. 32,030
Attorney for Intel Corporation

Fish & Richardson P.C.
PTO Customer No.: 20985
(858) 678-5070 telephone
(858) 678-5099 facsimile

WILLIAM E. HUNTER
REG. NO 47,671

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